

Eight Useful Tips for Your Car

A Homemade Air Valve and Other Devices

Ten Dollars for an Idea!

R. BOETTGER, of Union City, N. J., wins the \$10 prize this month for his suggestion of the homemade air valve (Fig. 3). Each month POPULAR SCIENCE MONTHLY awards \$10 in addition to regular space rates to the reader sending in the best idea for motorists. Other published contributions will be paid for at usual rates.

AN AUTOMOBILE valve spring is pretty stiff and requires a lot of energy to compress it. Here is a simple way to compress it and keep it in that position as long as desired without wearing out your muscles. As shown in Fig. 2, the bench vise supplies the leverage needed to compress the spring with great ease, and the small metal clip serves to keep it compressed. The spring should be set in the vise jaws to a point slightly past the center line of the spring, so that it will not bend out sidewise. Then screw up the vise and slide the spring from the vise into the clip. The clip can be cut out of sheet metal and bent into shape. The handle is not absolutely necessary, but is convenient.

Better Light in the Rain

YOU probably have noticed that your headlights do not seem to give nearly so much light when you are driving in the rain as on a dry night. This loss is due to the diffusion of the rain drops that collect on the glass. Each one acts like a tiny lens, and the rays that should be directed toward the road in front of you are refracted off in every direction except the right one. If you will wipe the glass of the headlights with a rag moistened with ordinary glycerin (Fig. 1), the rain will form a smooth layer.

Homemade Air Valve

A PROPERLY adjusted spring controlled air valve in the manifold between the carburetor and the cylinder head will materially increase your gasoline mileage. Fig. 3 shows how to make such a device from standard parts. An ordinary solderless union tee of the type used in gasoline lines forms the body. A light spring and a ball bearing of suitable size are placed in each end of the tee under the nut, which



Fig. 1. A simple way to increase light at night

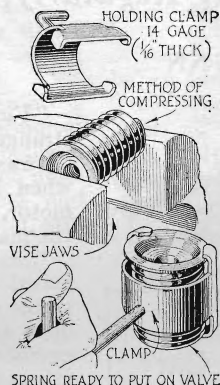


Fig. 2. This homemade holding clamp will prove useful when you have stiff valve springs



Fig. 5 (left). Wooden clip mounting for trouble light holds the light where needed. Fig. 6 (right). Simple anti-rattler for hood

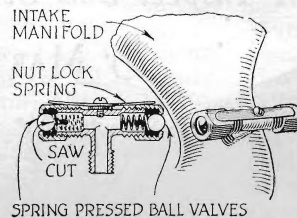
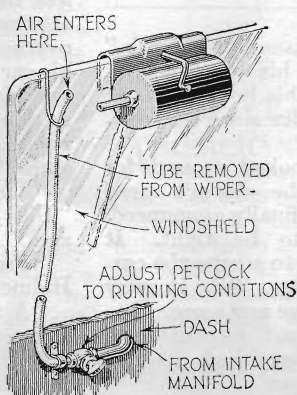


Fig. 3, above, shows how to make an automatic air valve to increase your gas mileage. Fig. 4 (left). Universal puller for auto wheels

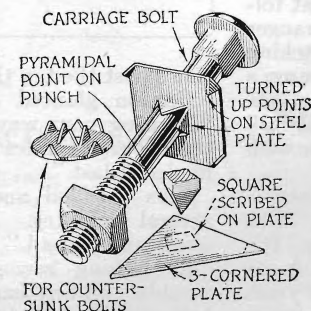
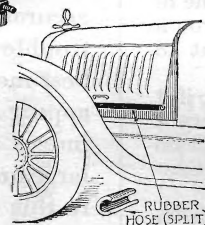
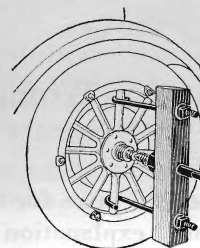


Fig. 8. Sheet metal washers will hold loose carriage bolts

can be turned to adjust the tension of the spring. A flat spring screwed to the tee will keep the nuts from turning.

More Mileage on Long Runs

IF YOUR car is fitted with an automatic windshield wiper of the vacuum operated type, you can fit an auxiliary air inlet to get more mileage out of your gasoline on long runs. Connect a petcock in the rubber hose line leading to the wiper and on long runs you can pull the end of the hose off the wiper and allow extra air into the manifold by adjusting the petcock. Fig. 7 shows the arrangement.

Ingenious Trouble Light

A WOODEN clip of the type shown in Fig. 5 makes an excellent base for a trouble light. A socket of standard type should be attached to the clip as indicated. The clip will hold on to any small round object, such as a wire, or on to the edge of a sheet metal part.

Universal Wheel Puller

ANY type of wheel that is stuck on the end of a taper axle, regardless of the size of the threaded hub, can be removed with the wheel puller shown in Fig. 4. A section of 2 by 4 inch lumber is drilled with a hole at each end and in the center. Heavy rods are forged into the shape of a hook at one end and threaded at the other. A heavy bolt is pointed at one end for use in the center.

Holds Carriage Bolts

CARRIAGE bolts that have worn loose in the wood are not easy to tighten. Sheet metal lock washers of the type shown in Fig. 8 will hold the bolt stationary while the nut is being set up tight. A pyramidal point should be ground on the end of the punch so that a square hole can be punched in the center of the washer. Where there is plenty space, a piece of sheet steel can be used with the corners turned down to grip the wood.

To Stop Hood Rattling

THE fastening arrangements on the hood of the modern automobile usually hold it tight enough to prevent rattles, but when the fastenings wear, annoying rattles sometimes develop. A way to eliminate them is shown in Fig. 6. Take a piece of small size garden hose the length of the hood, split it with a knife and slip it over the lower edge of the hood.